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ABSTRACT

This study examined the implementation of an early intervention program, Success for All (SFA), in elementary schools in Montreal, Quebec, Canada. A total of 543 at-risk students from four elementary schools participated in the study, with three schools serving as controls and one as the experimental site. Students completed achievement measures, reading tests, and a self-concept measure before and after the intervention. The SFA intervention was introduced in two stages, beginning with students in kindergarten through grade 3 in February 1995 and later including students in grades 4-6 in September 1995. All students were posttested on the corresponding pretest measures in the spring of 1996. Complete data on 128 experimental and 136 control students were considered for analysis. Analyses indicated that students in the SFA intervention program performed significantly better than control students on reading and self-concept measures. Students with special needs (mainly learning disabilities) in the SFA intervention also performed significantly better on reading measures than similar students in the control group. (Contains 19 references.) (MDM)

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The Challenges of Implementing Success for All in a Canadian Context

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Abstract

This study examined the implementation of an early intervention program, Success for All, in Montreal, Quebec, Canada. It included 543 at-risk students from four elementary schools. The program was implemented in an inner city school where forty per cent of the students had special needs. There were challenges to overcome including: financial (e.g., there is no equivalent to Title 1), substantive (e.g., whole language is the Ministry of Education mandated approach to reading instruct'on), and procedural difficulties (e.g., some teachers refused to be observed for the implementation checks required in SFA). This paper reports on how these initial difficulties were overcome. Also, data for 128 experimental, 136 control participants were analyzed for this paper on the Woodcock and Durrell reading measures and the Harter self-concept measure. Students from the experimental program performed significantly better than control students on the Word Attack and Word Identification subtests of the Woodcock, and the Durrell reading measures. The SFA students with special needs performed significantly better on Word Attack and Word Identification than those in the control schools. There were no significant differences on self-concept.

The Challenges of Implementing Success for All in a Canadian Context

By the time children reach grade three, it is possible to predict with accuracy who will eventually drop out of school and who will earn a high school diploma (Howard & Anderson, 1978). If children are not reading at grade level by then, chances of them graduating from high school are slim. Various programs have been developed to enhance children's literacy and thereby increasing the possibility that they will avoid joining the welfare rolls (Manning & Baruth, 1993). One such program that has been very effective in improving the reading achievement of at-risk children is *Success for All* (SFA) developed by Robert Slavin and his colleagues at Johns Hopkins University. This paper reports on the implementation of SFA in a Canadian context and the impact that this program had on children's reading achievement and self-concept.

What are the factors that place youngsters at risk for school failure? The term "at-risk child" can be defined in a number of ways, but generally includes children who are not expected to graduate from high school or who are expected to leave school with an inadequate level of basic reading, math, problem-solving skills and interpersonal skills. A number of risk factors have been identified as predictors of school drop-out, including poor school attendance, grade retention, poor academic achievement, behaviour problems, low socioeconomic status and being enroled in schools with a large percentage of poor children (Battistich, Solomon, Kim, Watson, & Schaps, 1995). Hrimech, Théoret, Hardy and Gariépy (1993) organized these factors into three categories: factors linked to the individual, factors linked to the family, and factors linked to the school.

First, in terms of the individual child, certain demographic factors (e.g., socioeconomic

status), school-related factors (e.g., attitudes toward school), and personal variables (e.g., self-esteem) are associated with school failure. Second, family characteristics associated with school failure include having parents with little education, and families who move frequently, have very low expectations of school and fail to provide support or encouragement for learning. Third, school factors associated with school failure include low teacher expectations, inappropriate or insufficient programs and lack of school discipline. In conclusion, the profile of a child at-risk indicates that a constellation of individual, family, school, community, and social factors contribute to the problem.

Disturbing evidence on school drop-out

One of the major results associated with school failure is student drop-out and the problems that ensue. The societal implications of school drop-out are profoundly disturbing and recent statistics are discouraging. Dropping out is a pervasive and serious problem for Quebec and Canada, which threatens to "reduce the national standard of living, heighten demands on social safety nets, and increase the economic burden on individual and corporate taxpayers" (Conference Board of Canada, 1992). A report issued by the Montreal Island School Council (Hrimech, Théoret, Hardy, & Gariepy, 1993) indicated that the drop-out rate for Quebec was 31% with some areas of Montreal reaching 50% (Ministère des Services de Santé et Sociaux, 1992).

The majority of school dropouts have parents who were also dropouts, suggesting that children from such families do not pursue educational opportunities and instead remain economically trapped. In addition, recent government data indicates a link between level of education, poverty, and illiteracy (Statistics Canada, 1996); 72% of adult welfare recipients have

less than high school education. Furthermore, twenty-eight per cent of Quebec citizens could not read the instructions on an Aspirin bottle, giving Quebec the lowest literacy rate of the Canadian provinces (Statistics Canada, 1996). In addition to the problems created for the social assistance network of supporting such adults, the loss of tax revenue is high. For example, it has been estimated that of the 137,000 students who dropped out of school in 1989, more than $4 billion dollars will be lost to Canadian society in terms of lifetime earnings, tax revenue, and monies needed to redress related social problems over the working life-time of these individuals (Conference Board of Canada, 1992).

Research on early intervention

Early intervention programs developed for at-risk children can have immediate and long-term success in helping children have positive school experiences, in building stronger self-esteem and reducing the risk of school dropout (Manning & Baruth, 1993). For example, Berrueta-Clement, Schweinhart, Barnett, Epstein, and Weikart (1984) examined the longitudinal effects of early intervention on low SES children who were either at-risk for school failure or special education placement. First, by age 19, children in the intervention group had greater school success compared to the control children and were more likely to gradate from high school. Second, in socio-economic terms, the intervention group had a higher level of employment, had greater earnings and were more likely to be self-supporting. Third, indices of social responsibility provided more favourable outcomes for the intervention than the control group; specifically, they had lower crime rates, displayed less delinquent behaviour and had fewer unwanted pregnancies. Follow-up of the subjects at age 28, indicated that the same patterns persisted in differentiating the two groups (Schweinhart, Weikart & Larner, 1986).

Slavin et al. (1989) reviewed the literature on effective programs for students at-risk and organized the information into five themes which are important for practice and policy: 1) Prevention and early intervention are more promising approaches than waiting for learning deficits to accumulate before providing remedial or special education services. 2) The quality of the programs implemented is more important than the actual setting in which the programs take place. 3) Generally, effective teaching strategies for students at-risk tend to be qualitatively similar to the best educational practices for all children. 4) Preschool programs which emphasize exploration and language development, and kindergarten programs which build language and prereading skills are most successful. 5) Effective pedagogical programs for students at-risk include the following: a) frequent assessment of student progress with subsequent adjustment of instruction; b) classroom programs which include continuous-progress and cooperative learning models; c) intensive (e.g., tutoring) remedial programs where students are allowed to catch-up.

Research suggests that early intervention programs can be successful at helping at-risk students, but that some program characteristics are more effective than others. SFA is designed to help children from disadvantaged backgrounds succeed both socially and academically (Slavin et al., 1996). It involves the restructuring of elementary schooling for at-risk students and the provision of family support to ensure that these children avoid academic failure. The foundation of the program is the notion that every child can and must succeed in the early grades and it is based upon the principles of prevention and immediate, intensive intervention.

Extensive prior research on *Success for All* indicates that children have demonstrated sustained improvement in reading achievement (Madden, Slavin, Karweit, Dolan, & Wasik, 1993; Nunnery et al., 1996; Slavin et al., 1996). Sometimes when educational innovations are

introduced there is much fanfare and high expectations which lead to a Hawthorne effect. The results from five years of research indicates that the difference between the SFA and control students' reading scores continues to grow with each successive year in the program; thus, novelty does not explain the program's apparent effectiveness.

The goals of this project are threefold. To begin with, it evaluates the first implementation of the program outside the United States. Although the Canadian and American cultures are very similar, there are some differences that might influence the implementation of this program in a non-U.S. context. Second, Slavin and his colleagues have found the program to be particularly successful with the lowest achieving students (Slavin et al., 1994) and with special education students (Ross, Smith, Casey, & Slavin, 1995); thus, we evaluated an implementation in a school with a large percentage of students with special needs. Third, while Slavin and his colleagues have found impressive improvements in children's academic achievement, none of the previous research reported on the impact of the SFA program on children's psychosocial functioning. This project aimed at determining the effects of the program on students' self-concept in addition to their reading achievement.

Challenges to Canadian Implementation

In attempting to implement SFA in Montreal, Quebec, Canada we encountered several challenges. They required overcoming financial, substantive and procedural difficulties. First, there is no equivalent to either Title 1 or other special funding that exists for disadvantaged children in the U.S. Funding for the program had to come from general operating funds augmented by research grants and special grants from the Quebec Ministry of Education.

Second, whole language is the Ministry of Education mandated approach to reading

instruction. Therefore, there was some resistance related to the highly structured phonics aspect of the SFA program. Third, teachers in Quebec are not accustomed to being observed by anyone other than their principal; therefore, some teachers were uncomfortable participating in the implementation checks that are an integral part of the SFA program. Fourth, because the majority language in Quebec is French, English mother tongue students spend a significant portion of class time receiving language instruction in French. This leaves less time in the school day to schedule the ninety minute block for reading that is the focal point of the SFA program. In addition to reporting on the results of our testing this paper describes how we overcame these challenges, which might help other countries in their adaptations of SFA.

Slavin and his colleagues (Slavin et al., 1994) reported that the program seems to be particularly effective for students who scored in the lowest 25% on the pretest, with effect sizes of +0.82 for first graders, +1.00 for second graders, and +0.98 for third graders. In a comparison of SFA and Reading Recovery, Ross, Smith, Casey, and Slavin, (1995) found a mean effect size of .77 in favor of the SFA over reading Recovery students on reading posttest scores. Given these indications that SFA works best with these low achieving students in this project it was implemented in a school where forty per cent of the children are coded by the school board special education consultants as having special needs. These children's disabilities ranged from slight developmental delays through to severe autistic tendencies.

Given the close relationship between achievement and self-esteem, it is not surprising that evidence indicates that children who perform poorly in reading have low self-esteem (Frymier et al. 1992). No research into the effects of SFA on children's psychosocial functioning has been reported; thus we assessed children's self-concept as well.

We predict that students in the experimental school will demonstrate greater gains in their reading achievement than students in the control schools. This effect will be most pronounced for students who initially score lowest on achievement measures. In addition, we predict positive changes in students' self-concept.

Method

Participants

The study took place within four schools, one experimental school and three control schools in Montreal, Quebec. The schools served multi-ethnic populations with the majority of students being bused from a wide catchment area. These children came mostly from disadvantaged areas of the city. Students from kindergarten to grade six (total N= 543) participated in the program. Of the students at the experimental site, forty percent have been coded as students with special needs, mostly some form of learning disability.

Measures

Achievement Measures Three achievement measures were administered to experimental and control subjects during the pretest and posttest sessions. All participants completed the Peabody Picture Vocabulary Test - Revised (PPVT-R) (Dunn, & Dunn, 1981) which examines a subject's receptive vocabulary utilizing standard American English. The median reliability of this measure is .81.

Three subtests of the Woodcock Reading Mastery Test-Revised (Woodcock, 1987) were administered to the grade two to grade six students: Word Attack, which evaluates subject's phonic knowledge, Passage Comprehension which taps vocabulary skills and comprehension, and Word Identification which assessed reading words in isolation. Subtest reliability ranges

from .84 to .98.

The Durrell Analysis of Reading Difficulty (Durrell, & Catterson, 1983), which assesses the general level of reading achievement while concentrating on students' various reading skills and subskills, was the final achievement measure. A correlation of .85 was determined between paragraphs of the Oral Reading test.

Self-Concept Measure The Self-Perception Profile for Learning Disabled Students (Renick and Harter, 1988) is a self-report measure for assessing both learning disabled and normally-achieving children's domain specific judgements of their competence and their perceived worth or esteem as a person. The reliability of two subtests that are particularly relevant for this study are the General Intellectual Ability at .81 and Reading Competence at .86.

Procedure

Implementation Our implementation of the program followed quite closely that prescribed by Slavin (Slavin, Madden, Karweit, Dolan, & Wasik, 1992). It includes the following elements: a) a developmentally appropriate kindergarten, b) reading programs incorporating cooperative learning, c) eight week assessments, d) immediate, remedial tutoring for students experiencing difficulty, e) a family support team, and f) a program facilitator. The program was introduced in two stages. The kindergarten to grade three students began in February, 1995 and the grade 4 to 6 students began in September 1995. A steering committee, composed of researchers from Concordia University, administrators from the school board, the school principal, facilitator, and teacher representative was formed to guide the implementation and research.

Testing Pretesting was administered in three sessions within 1995. The first session,

consisting of students from kindergarten to grade three, was conducted in February 1995, while the second session of grade four to grade six students was administered in Spring 1995. New kindergarten and other students new to the schools were tested in Fall 1995. All students were posttested on the corresponding pretest measures in the spring of 1996.

Analysis

Listwise deletion removed from the analyses those students who were not measured on all the posttest reading achievement scales to account for the mortality of students who left both the control and experimental schools and absenteeism at the time of the posttest measurement. Consequently, of the 232 experimental and 311 control participants who participated in the study, 128 experimental, 136 control were considered for the analyses of posttest reading scores.

The two groups were compared on pretest measures to established the equivalence of the groups at the time of pre testing. A MANOVA of all pretest reading measures indicated that the SFA and control group were not equivalent: Multivariate $F(6,257) = 7.68$, $p<.001$. Univariate analysis of each measure showed that significant differences were found on all of the components of the Woodcock Reading Mastery Test: Word Identification, $F(1,262)=25.67$, Letter Identification, $F(1,262)= 14.22$, Passage Comprehension, $F(1,262)=17.78$, and Word Attack, $F(1,262)= 19.26$, all $ps <.001$. A significant difference was also found on the Durrell, $F(1,262)= 35.56$, $p<.001$, but not on the PPVT, $F(1,262)=0.98$, $p>.05$.

As there was evidence of pretest group inequivalence univariate analysis of covariance (-ANCOVA) was selected to examined group (control and SFA) differences using the raw scores of the posttest measures, with the respective pretests (PPVT, Durrell, and the four Woodcock subtests) and the age in months at posttest and pretest, entered sequentially, as covariates. To

determine the effect of the reading program on those students who were documented as having learning and behavioral difficulties further analyses were conducted.

The experimental and control conditions were additionally compared on self-concept measures. The posttest measures of the self-concept scale relevant to language ability (spelling competence, writing competence, reading competence) and general intellectual ability and self-worth were analyzed multivariately, using the respective pretest measures and pretest and posttest ages of the subjects as covariates.

To facilitate comparisons with previous research, all comparisons between the control and experimental conditions are given as effect sizes (ES) and reported for all comparison, including those that were not significant.

Results

Implementation Issues

The encouragements and rewards involved in implementing the program outweighed the initial challenges. While whole language is the approach to reading instruction mandated by the Ministry of Education in Quebec, some of the experimental teachers were apprehensive about the structured phonics component; yet many had expressed frustration with years of having little success teaching special needs students with this method. It is likely that the enthusiasm of the parents, the feedback from the implementation checks, and the initial progress of the children with the SFA program provided motivation for these teachers to continue.

The commitment and creativity of the principal helped surmount the procedural challenges. To fit in the Reading Wings component, half of the day's activities are scheduled

before recess and half after. Some of the time of support staff for special needs students is spent tutoring.

The reluctance of the teachers to being observed for the implementation checks was eliminated by listening to the teachers' concerns, reassuring them that the goal of the observations was to provide them with feedback to help them implement the program effectively. We also involved the head of the teacher's union who was supportive of the program and helped reassure the teachers that the implementation checks would not have any implications for their jobs.

The impressive findings of the U. S. implementations convinced the school board administration to invest their time and resources in the program. We overcame some of the cost problems for the short-term by supplementing the school budget with research grants and a grant from a foundation.

Results of data analyses

Overall Sample

On the reading measures MANCOVA, we found a significant multivariate difference between the SFA and control groups, $F(6,249)= 2.32$, $p=.034$. Univariate analyses revealed that the experimental group scored significantly better on the Word Identification, $F(1,254)= 10.08$, $p=.002$, and Word Attack, $F(1,254)= 5.00$, $p=.026$ components of the Woodcock Reading Mastery Test, and the Durrell, $F(1,254)= 4.42$, $p=.036$. Figure 1 displays these univariate comparisons.

Insert Figure 1 here

All other univariate tests of reading ability were not significant (all $ps > .2$). Descriptive

statistics for all analyses are reported in Table 1. All means given are adjusted for the covariates.

Insert Table 1 here

Special Education Students

Using information concerning students with special needs provided by the control and experimental schools, we examined group differences for those students with learning and behavioral difficulties. The adjusted means of the experimental group significantly surpassed those of the control group on two of the six reading measures: Word Identification, $F(1,80)= 4.74$, $p=.032$, and Word Attack, $F(1,80)= 5.30$, $p=.024$, subtests of the Woodcock. The difference between the experimental and control groups was not significant on any of the other reading measures: Letter Identification, $F(1,80) = 3.70$, Passage Comprehension, $F(1,80) = 1.00$, Durrell, $F(1,80) = 2.16$, and PPVT, $F(1,80)=0.33$.

Self-Concept Measures

We compared the SFA and control conditions on components of the self-concept measure relevant to language arts (reading, writing, and spelling competence) and general self-concept (global self- worth and general intelligence). The MANCOVA failed to find significant group differences $F(5,101)= .16$, $p =.978$. Furthermore, all univariate comparisons on each component were insignificant, all $ps > .50$.

Discussion

This early intervention program that involved school restructuring made a significant impact on the reading achievement of these disadvantaged, at-risk children. The effects of differential regression and differential maturation are highly unlikely as rival explanations to the effectiveness of the OOPS intervention because: a) test-retest reliability of these standardized

achievement measures are high (i.e., .81 or higher), insuring no large effects of regression towards the mean due to measurement error; b) the greater concentration of special needs students in the experimental school suggests that maturational influences should be higher in the control schools, possibly reducing the true size of the treatment effect; and c) the effects of local history favour the control participants who were exposed to more academically advanced peers.

We found no effects of the program on students' self-concept. Children in both conditions seemed to rate themselves very highly despite their actual level of functioning. Even on the pretest, children who were reading far below grade level rated their reading competence highly. It may be that increasing children's reading ability does not improve their perceptions of their competence, especially if they already have unrealistically high beliefs about those abilities. Perhaps, for fear of damaging children's self-esteem teachers do not communicate to them their actual performance level. However, the experimental teachers and principal report an apparent increase in students' self-assurance, attitudes, and a decrease in behavior problems which would indicate increased self-esteem. We need to find other measures, perhaps behavioral measures, to capture how they actually feel about themselves.

Limitation of Study

Our study was limited to only one experimental school, a school that is somewhat different than most elementary schools in Quebec today. The higher percentage of special needs students at the experimental school is not typical of the composition of schools; therefore, we cannot say definitively that the findings would generalize to most schools in the province. The Ministry of Education has a policy of integration and therefore most schools have less than fifteen per cent children with special needs.

Implementation Issues

The debate between whole language and phonics instruction continues to plague North American education. Only when we come to see that it is children that we are teaching - not a method - that we will be able to put this debate asside and get on with providing whatever it takes to get a child to read, something that SFA promotes.

Although we overcame some of the initial financial problems for the short-term with research grants and a grant from a foundation, if the program is to expand and exist on a wider basis, school boards will need to find ways of integrating this component into their operating budgets. In our future research, we will be exploring ways of restructuring components of the program to reduce costs without decreasing its effectiveness. If the program continues to provide success to these students it will mean reduced costs for the school board in the future (e.g., fewer special education and counselling costs), but other increased costs. Reduced levels of school drop-out mean higher secondary school enrolments. Of course, in the larger context, the promise of SFA means dramatically reduced costs for society in the long term. If governmental bodies were to consider these influences and worked more closely with the education sector, the extra costs for the school might be met. One way that this can be accomplished is by breaking down barriers - by establishing new ways of thinking about problems. By and large, up until now, that rethinking has not occurred.

Directions for Future Research

In order to reduce the costs of implementing the program, future research should examine the various components of the program to determine which factors account for the greatest

effects. One component of the program that is particularly expensive to implement is the one-to-one tutoring by certified teachers. Although it impacts on only a small percentage of the children in the program it is these children who are most in need of help. Various forms of tutoring, including cross-age tutoring, and computer- assisted tutoring will be the focus of one of our next studies related to *Success for All.*

Another area that needs investigation is for what children is the program least effecctive and what adaptations can be made to help these children learn. Only then will we have success for all. Our sample is qute small but we will analyze these data more carefully to determine if there is one type of disability which the program is not overcoming.

Conclusion

With creativity and perseverance, the initial difficulties in implementing Success For All in a Canadian context were overcome. This program led to higher reading achievement for these at-risk children, many of whom have serious learning problems. This indicates that most children can learn to read if provided with the right kind of instruction.

We will follow these children's progress as they continue in *Success for All.* Slavin et al. (1996) found that the effects increased with each additional year in the program. To reduce the costs and improve children's computer literacy, we will investigate the use of computer-assisted instruction in the tutoring component of the program.

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Table 1

Adjusted Means and Standard Deviations for Reading Tests

Comparison		SFA	Control	ES
Overall Sample				
N		128	136	
Word Identification	M	66.22	63.31	0.17*
	(SD)	(20.57)	(14.28)	
Word Attack	M	25.68	23.90	0.16*
	(SD)	(11.43)	(10.68)	
Letter Identification	M	46.81	46.64	0.05
	(SD)	(4.07)	(2.89)	
Passage Comprehension	M	32.87	32.32	0.06
	(SD)	(10.86)	(9.04)	
Durrell	M	3.86	3.64	0.17*
	(SD)	(1.29)	(1.26)	
PPVT	M	100.63	98.82	0.09
	(SD)	(20.95)	(19.09)	

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Table 1 continued

Special Needs subsample

n		68	22	
Word Identification	M	59.87	55.27	0.22*
	(SD)	(21.54)	(18.59)	
Word Attack	M	21.69	18.05	0.31*
	(SD)	(11.20)	(13.22)	
Letter Identification	M	46.36	45.36	0.26
	(SD)	(3.82)	(3.74)	
Passage Comprehension	M	29.18	27.98	0.11
	(SD)	(10.93)	(10.31)	
Durrell	M	3.44	3.13	0.23
	(SD)	(1.26)	(1.65)	
PPVT	M	95.89	93.68	0.10
	(SD)	(23.52)	(14.13)	

* effect size measures a significant group difference at $p<.05$.

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Figure 1

Means for SFA and control groups on significant univariate comparisons